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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,199	03/31/2006	Masahiro Furuya	Q93697	7137
23373 7590 12/22/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER TURNER, ARCHENE A				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
12/22/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com  
PPROCESSING@SUGHRUE.COM  
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### Office Action Summary

**Application No.**

10/574,199

**Applicant(s)**

FURUYA, MASAHIRO

**Examiner**

ARCHENE TURNER

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 10/09

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1,3-4,7,8,11-12,16,17 are rejected under 35 U.S.C. 102(a) as being anticipated by Irie et al ("Carbon-doped Anatase TiO<sub>2</sub> powders as a visible light sensitive Photocatalyst")

Irie et al disclose the claimed C-doped titanium alloy having the claimed amount of carbon therein. The claimed hardness is considered inherent to the amount of C-doping.

3. Claims 1,3-4,7,8,11-12,16,17 are rejected under 35 U.S.C. 102(b) as being anticipated by McCurdy (6,238,738) or Tada et al (6,194,346) or Toshiba Ceramics (JP 2005-047786).

The references disclose the claimed C-doped titanium alloy having the claimed amount of carbon therein. The claimed hardness is considered inherent to the amount of C-doping.

4. Claims 1,3-4,7,8,11-12,16,17 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhou et al (7,175,911) or Kaneko et al (6,863, 987) .

The references disclose the claimed C-doped titanium alloy having the claimed amount of carbon therein. The claimed hardness is considered inherent to the amount of C-doping.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5,6,13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (7,175,911) or Tada et al (6,194,346) or Toshiba Ceramics (JP 2005-047786) or Irie et al ("Carbon-doped Anatase TiO<sub>2</sub> powders as a visible light sensitive Photocatalyst") in view of Toyota (JP 2002-028998)

The primary references disclose the invention substantially as claimed except for the claimed layered structure.

Toyota discloses the claimed layered structure for a Photocatalyst layer.

Thus it would have been obvious to one of ordinary skill in the art to provide the primary references with the claimed layered structure as this structure is known in the photocatalytical art as shown by Toyota.

7. Claims 9,10-18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (7,175,911) or Tada et al (6,194,346) or Toshiba Ceramics (JP 2005-047786) or Irie et al ("Carbon-doped Anatase  $\text{TiO}_2$  powders as a visible light sensitive Photocatalyst").

The primary references disclose the invention substantially as claimed except for the claimed use of Ti alloys.

Ti alloys are known to be functionally equivalent to Ti.

thus it would have been obvious to one of ordinary skill in the art to use a Ti alloy in the primary references as alloys are known to be functionally equivalent.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Archene Turner whose new telephone number is (571) 272-1545. The examiner can normally be reached on Monday, Wednesday through Friday from 10:30 am. to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Please remember to include on the fax, the art unit 1775, serial number and Examiner's name.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

**/A. A. Turner/  
Primary Examiner  
Group 1700**

aat